Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of the claims in the application:

Listing of Claims:

1 - 55. (Cancelled)

56. (Currently Amended) An atomic layer deposition (ALD) apparatus, comprising:

a reaction chamber coupled between a first gas flow pathway and a second gas flow pathway, ~~a~~ the first gas flow pathway coupled upstream of ~~a~~ the reaction chamber and having switchable first and ~~third~~ second flow limiting conductances ~~such that during an expose period of an ALD process the first gas flow pathway provides a first flow from a first pressure controller to the reaction chamber and during a reactant removal purge period of the ALD process the first gas flow pathway provides a second flow from a second pressure controller to the reaction chamber, the second pressure controller having a greater pressure than the first pressure controller~~; and ~~a~~ the second gas flow pathway coupled downstream of the reaction chamber and ~~having switchable~~ characterized by a ~~second and fourth flow limiting conductances,~~ downstream flow limiting conductance switchable under the control of a control system configured to operate the downstream flow limiting conductance to maintain a nominally constant ratio of a conductance of the first gas flow pathway to a conductance of the second gas flow pathway under varying gas flow conditions ~~the first flow limiting conductance to the second flow limiting conductance being nominally equal to a ratio of the third flow limiting conductance to the fourth flow limiting conductance, the first and second gas flow pathways controlled so as to switch the first and third conductances and the second and fourth conductances such that during the ALD process a nominally constant pressure in the reaction chamber is maintained~~.

57. (Currently Amended) The ALD apparatus of claim 56, wherein the first gas flow pathway is configured to provide a first gas ~~for the first~~ flow condition different from a second gas ~~for the second~~ flow condition.

58. (Currently Amended) The ALD apparatus of claim ~~56~~ 57, wherein the ~~expose period~~ first gas flow condition comprises a plasma-assisted process.

59. (Currently Amended) The ALD apparatus of claim ~~56~~ 57, wherein the first gas flow pathway is configured such that the first flow limiting conductance is switched to the ~~third~~ second flow limiting conductance at a substantially coincident point in time as the first gas flow condition is switched to the second gas flow condition.

60. (Currently Amended) The ALD apparatus of claim ~~56~~ 57, wherein the first gas flow pathway is configured so that the first gas flow condition is switchable to the second gas flow condition prior to completion of material deposition during the ~~expose period~~ first gas flow condition.

61. (Currently Amended) The ALD apparatus of claim ~~56~~ 57, wherein the ~~second gas flow pathway is configured such that~~ the ~~second~~ downstream flow limiting conductance ~~in the second gas flow pathway~~ is switchable ~~to the fourth flow limiting conductance~~ from a first state to a second state at a different point in time than that at which the first gas flow condition is switched to the second gas flow condition.

62 - 63. (Cancelled)

64. (Currently Amended) The ALD apparatus of claim ~~62~~ 56, wherein the downstream flow limiting ~~conductances include~~ conductance comprises a throttle valve.

65. (Currently Amended) The ALD apparatus of claim 64, wherein the throttle valve comprises an annular throttle valve located within the ~~reactor~~ reaction chamber.

66. (Previously Presented) The ALD apparatus of claim 65, wherein the annular throttle valve includes multiple vanes, each having an axis therethrough.

67. (Previously Presented) The ALD apparatus of claim 65, wherein the annular throttle valve includes multiple blades arranged in an iris configuration.

68. (Previously Presented) The ALD apparatus of claim 65, wherein the annular throttle valve includes multiple blades, each having a number of holes therethrough, at least one of the blades being rotatable about an axis such that holes extending through the rotatable blade align with holes of at least one of the other blades to provide a passage through the annular throttle valve.

69. (Currently Amended) The ALD apparatus of claim ~~62~~ 56, wherein the first gas flow pathway comprises multiple gas flow pathways for purge gasses and chemical precursors which share one or more common inputs to the ~~reactor~~ reaction chamber.

70. (Currently Amended) The ALD apparatus of claim ~~62~~ 56, wherein the ~~upstream flow limiting conductances and~~ downstream flow limiting ~~conductances~~ conductance ~~are configured~~ is switchable under the control of the controller to switch ~~operations modes~~ states according to a difference in residence times for passage of gas between (i) the ~~upstream conductances~~ first gas flow pathway and the reaction chamber, and (ii) the reaction chamber and the downstream flow limiting conductance ~~conductances~~.

71 - 74. (Cancelled)

Interview Summary

On February 10, 2009, a telephonic interview between the undersigned attorney of record and Examiner Zervigon took place. Also present by phone was Thomas Seidel, a co-inventor of the present application, and Johannes Lindner and Brian Lu, employees of the assignee.

During the interview, the amendment to the claim 56 set forth herein was discussed with reference to the rejections in view of Hamilton, Shealey, Sakai and Kugimiya. Also, the amendments to claim 56 to recite structural features, an in particular the controller, were discussed. No agreement as to patentability was reached but it was agreed that the proposed amendments would be submitted with a Request for Continued Examination to allow time for an updated search.

During the interview, Examiner Zervigon suggested that the following references be reviewed vis-à-vis the proposed amendments: US Patent 4,747,367 of Posa; US Patent 5,070813 of Sakai; and US Patent 5,091,207 of Tanaka. Sakai was cited in the last Office Action and is discussed in detail below and the Posa and Tanaka references are also discussed to aid in the continued examination of this application.